Syllabus for Math 323
Linear Algebra
Fall 2019
Section 502

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Office: Blocker 513c
Office hours: Wednesday 2:00 to 3:00 pm and Thursday 11:30 am to 12:30 pm or by appointment.
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Class hours:
TR 2:20–3:35 pm JCAIN 216

MATH 323 web page: The web page of the course is
http://www.math.tamu.edu/~nekrash/teaching/19F/323/M323.html

Text. Elementary Linear Algebra by Stephen Andrilli and David Hecker, Elsevier, 2016.

Topics covered: Linear equations and matrices; real vector spaces, linear transformations, change of bases, determinants, eigenvalues and eigenvectors, diagonalization, inner products. Designed to include more theory and be more demanding than MATH 304. **Prerequisites:** MATH 148, MATH 152 or MATH 172; MATH 300; junior or senior classification or approval of instructor.

Grading. Your grade will be determined by homework, two midterm exams and a *cumulative* final exam. The weights of each of these are as follows.

Homework	Exam I	Exam II	Final Exam	Total
20 pt	25 pt	25 pt	30 pt	100
weekly	Oct 8	$\approx$ Oct 31	Dec 11, 1:00–3:00 pm	

I may curve any grade and will then compute the course grade by the following rule: A for at least 90 points, B for at least 80 points, C for at least 70 points, D for at least 60 points and F for less than 60 points.

Plan of lectures.

8/27 2.1. Solving Linear Systems Using Gaussian Elimination

9/3 2.2. Gauss-Jordan Row Reduction and Reduced Row Echelon Form.

9/5 1.1. Fundamental Operations with Vectors. 1.2. The Dot Product.

9/10 1.4. Fundamental Operations with Matrices. 1.5. Matrix multiplication.

9/12 2.4. Inverces of Matrices.

9/17 3.1. Introduction to Determinants.

9/19 3.2. Determinant and Row Reduction.

9/24 3.3. Further Properties of the Determinant.

9/26 4.1. Introduction to Vector Spaces.

10/1 4.2. Subspaces. 4.3. Span.

10/3 4.4. Linear Independence. 4.5. Basis and Dimension. 2.3. Rand and Row Space.

10/8 First midterm exam

10/10 4.7. Constructing Special Bases. 4.7. Coordinatization.

10/15 5.1. Introduction to Linear Transformation.

10/17 5.2. The Matrix of a Linear Transformation.

10/22 5.3. The Dimension Theorem. 5.4. One-to-One and Onto Linear Transformations.

10/24 3.4. Eigenvalues and Diagonalization. 5.6. Diagonalization of Linear Transformations.

10/29 5.7. Diagonalization of Linear Operators.

10/31 Second midterm exam

11/5 6.1. Orthogonal Bases and the Gram-Schmidt Process

11/7 6.2. Orthogonal Complements

11/12 6.3. Orthogonal Diagonalization.

11/14 7.1. Complex n-Vectors and Matrices.

11/19 7.2. Complex Eigenvalues and Complex Eigenvectors.

11/21 7.4. Orthogonality in $\mathbb{C}^n$.

11/26 7.5. Inner Product Spaces.

12/3 Overview

Make-up policy: Make-ups for missed quizzes and exams will only be allowed for a university approved excuse in writing. Wherever possible, students should inform the instructor before an exam or quiz is missed. Consistent with University Student Rules , students are required to notify an instructor by the end of the next working day after missing an exam or quiz. Otherwise, they forfeit their rights to a make-up.

Scholastic dishonesty: Copying work done by others, either in-class or out of class, is an act of scholastic dishonesty and will be prosecuted to the full extent allowed by University policy. Collaboration on assignments, either in-class or out-of-class, is forbidden unless permission to do so is granted by your instructor. For more information on university policies regarding scholastic dishonesty, see University Student Rules.

Remember the Aggie Code of Honor: *"An Aggie does not lie, cheat, or steal or tolerate those who do."*

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• Allegations of sexual assault, sexual discrimination, or sexual harassment when they involve TAMU students, faculty, or staff, or third parties visiting campus.

These reports may trigger contact from a campus official who will want to talk with you about the incident that you have shared. In many cases, it will be your decision whether or not you wish to speak with that individual. If you would like to talk about these events in a more confidential setting, you are encouraged to make an appointment with the Student Counseling Service (`https://scs.tamu.edu/`).

Students and faculty can report non-emergency behavior that causes them to be concerned at `http://tellsomebody.tamu.edu`.